

# PATENT COOPERATION TREATY

TRANSLATION

From the  
INTERNATIONAL SEARCHING AUTHORITY

PCT

WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

To:

Date of mailing  
(day/month/year)

Applicant's or agent's file reference

**05PCT01**

**FOR FURTHER ACTION**

See paragraph 2 below

International application No.

**PCT/JP2005/001057**

International filing date (day/month/year)

**27.01.2005**

Priority date (day/month/year)

**28.01.2004**

International Patent Classification (IPC) or both national classification and IPC

Applicant

**TOKYO ELECTRON LIMITED**

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☒ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

2. **FURTHER ACTION**

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA/JP

Authorized officer

Facsimile No.

Telephone No.

WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/JP2005/001057

Box No. I

Basis of this opinion

1. With regard to the language, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.  
☐ This opinion has been established on the basis of a translation from the original language into the following language \_\_\_\_\_, which is the language of a translation furnished for the purposes of international search (under Rule 12.3 and 23.1(b)).
2. With regard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
  - a. type of material  
☐ a sequence listing  
☐ table(s) related to the sequence listing
  - b. format of material  
☐ in written format  
☐ in computer readable form
  - c. time of filing/furnishing  
☐ contained in the international application as filed.  
☐ filed together with the international application in computer readable form.  
☐ furnished subsequently to this Authority for the purposes of search.
3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table(s) relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

**WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY**

International application No.

PCT/JP2005/001057

**Box No. V** Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

**1. Statement**

Novelty (N)	Claims	<u>2, 3, 5, 8, 9, 11-17</u>	YES
	Claims	<u>1, 4, 6, 7, 10</u>	NO
Inventive step (IS)	Claims	<u>12-17</u>	YES
	Claims	<u>1-11</u>	NO
Industrial applicability (IA)	Claims	<u>1-17</u>	YES
	Claims		NO

**2. Citations and explanations:**

Document 1: JP, 10-154706, A (Applied Materials, Inc.), 09 June, 1998 (09.06.98), paragraphs [0185]-[0200] and [0204]

Document 2: JP, 2003-183839, A (Omi Tadahiro), 03 July, 2003 (03.07.03), paragraphs [0011]-[0019] and [0034]-[0050]

Claims 1, 4, 6, 7 and 10:

In document 1, a) a cleaning method for a process chamber of a substrate processing apparatus that houses a processed substrate in a process chamber and performs a fixed process to the processed substrate, b) an invention concerning a processing apparatus and a process chamber cleaning method of a substrate processing apparatus that alternately performs the operation of shaping gas plasma that contains oxygen gas in the process chamber and shaping gas plasma that contains nitrogen gas in the process chamber are described. The subject matters of claims 1, 4, 6, 7, and 10 accomplish the process chamber cleaning method described in document 1 and a part of a processing apparatus and do not appear to be novel.

Claims 2 and 8:

In claims 2 and 8, although limiting the electronic temperature of plasma to 2eV or less, in a plasma processing apparatus method and in the technical field of plasma processing devices, accomplishing the optimum value of the said parameters and the ability to achieve it based on normal trial and error and normal design application is defined. Therefore, claims 2 and 8 do not appear to involve an inventive step according to document 1.

Claims 3, 5, 9, and 11:

In document 2, as technology that uniformly shapes plasma, a method or device that introduces microwaves to the inside of a processing chamber by a flat antenna that has multiple slot antennas and the use of said device in a processing chamber or oxidation processing is described.

In the technical field of plasma processing devices, since uniformly shaping plasma is usual, in the subject matter described in document 1, the use of the technology described in document 2 for uniformly shaping plasma is easy for a person skilled in the art.

Claims 12-17:

In a processing chamber, a seasoning process of a process chamber that at least one time shapes gas plasma containing oxygen or nitrogen is not described in any of the documents cited in the ISR and is not an obvious matter to a person skilled in the art.

WRITTEN OPINION OF THE  
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International application No.

PCT/JP2005/001057

Box No. VI      Certain documents cited

1. Certain published documents (Rule 43bis.1 and 70.10)

Application No. Patent No.	Publication date (day/month/year)	Filing date (day/month/year)	Priority date (valid claim) (day/month/year)
JP 2004-335789 A [E, X]	25.11.2004	08.05.2003	
JP 2005-85956 A [E, X]	31.03.2005	08.09.2003	

2. Non-written disclosures (Rule 43bis.1 and 70.9)

Kind of non-written disclosure	Date of non-written disclosure (day/month/year)	Date of written disclosure referring to non-written disclosure (day/month/year)
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